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United States Department of Agriculture

Agricultural Stabilization and Conservation Service

Aerial Photography Field Office

Leaflet 571

# How Aerial Photos Can Help You



## ASCS Aerial Photography

The Agricultural Stabilization and Conservation Service, an agency of the U.S. Department of Agriculture, uses aerial photography as the basic tool to determine acreage for farm program compliance purposes. Through the use of rectified aerial photos, ASCS county offices can quickly make accurate acreage determinations. Aerial photos, when properly delineated and annotated, serve as the basic record of owner operator units and land use utilization.

Aerial photos are valuable in many other ways besides crop measurement. They provide precise visual information in:

- conservation practices
- urban development and planning
- tax assessment
- pollution studies
- drainage programs
- boundary determination
- road location and highway development
- pipeline and powerline construction
- watershed and reservoir planning
- historical record of property changes

Through the ASCS Aerial Photography Field Office (APFO) in Salt Lake City, Utah, thousands of photographs are purchased each year by Federal and local government agencies, private firms, and the general public.

## Aerial Photography of Farmland

Farmers who participated in farm programs when they began in 1933 needed to have an accurate measurement made of their farms. However, precise measurement then could only be made in the same way it was done in George Washington's day: surveyor's chains were carried around fields, and maps were drawn by hand. A quicker, cheaper way had to be found since there were millions of acres to measure and map across the country.

In 1935 USDA began to use rectified-to-scale aerial photos to more efficiently measure acreage. Today, APFO has aerial photomaps which cover all the Nation's major cropland areas.



Irrigation waterways



## National High Altitude Program

The National High Altitude Program (NHAP) was started in 1978 by a number of Federal agencies combining their funds and knowledge to provide the greatest range of users with consistent and systematic aerial photography coverage of the United States.

The data range of NHAP photography available is 1980 - 1987.

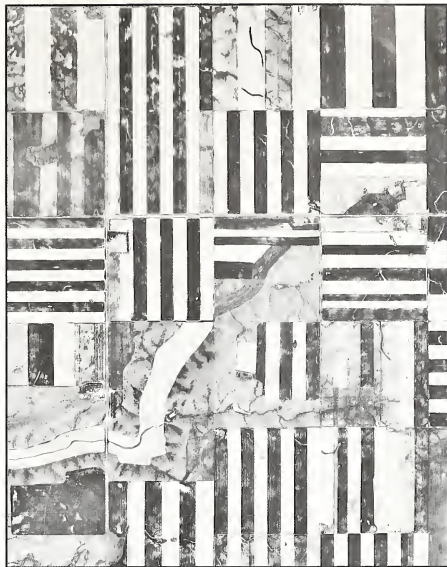
Two scales of photography were secured simultaneously. A scale of 1:80,000 is exposed on black-and-white panchromatic film, and the 1:58,000 is exposed on color infrared (CIR) positive film.

The APFO has a complete file of the 1:58,000 CIR film. Both color infrared and black-and-white reproductions can be produced from this film.

## National Aerial Photography Program

The National Aerial Photography Program (NAPP) began in 1987 as a replacement for NHAP, with the objective of acquiring complete uniform photo coverage of the conterminous 48 States over a 5- to 7-year cycle.

NAPP photography has a flying scale of 1:40,000 and is exposed on either CIR positive film or black-and-white film, depending on the requirements of the project.



Strip farming

## Rectified Aerial Photographs

Vertical photography is used for rectified photographs.

Actual overflying and photographing of land is done by private companies on a contractual basis. The camera is mounted so that it points straight down from the aircraft. Since the aircraft is constantly affected by wind currents, changing ground elevation, and the motion of the aircraft during flight, the camera is often at an angle off the true vertical. The resulting photo is tilted. This distortion must be compensated for in order to obtain rectified (accurate/true-to-scale) photographs.

Correction is accomplished by a system of analytical aerotriangulation which measures known points on a photo and mathematically computes scale and tilt data necessary for scale-accurate photos.

This data is then used when making scaled enlargement on specialized rectifying enlargers and maintains an accuracy greater than 99% for most cropland. The final rectified aerial photograph is, in effect, a photographic map accurately representing ground features.

## How to Order Aerial Photography

To order aerial photography:

Visit your State or county ASCS office. They can assist you in selecting and ordering the photos you need.

If you don't have access to an ASCS office, you can send the APFO one of the following:

- a legal description of the area you are interested in (township, range, and section numbers)
- latitude and longitude coordinates
- topographic, county, or city map outlining your area of interest as accurately as possible

Prints are made only after an order and payment have been received. Methods of payment are:

- official purchase order from tax-supported agencies only
- checks or money orders
- Visa or Mastercard if you have the exact photo number needed (symbol, roll number, and exposure number)

APFO has no stock of completed photos on hand. You can expect an order to normally take from 4 to 6 weeks to be made. You also need to allow 10 days for shipping time.

## APFO Products and Services

Photographs are available in different scales ranging from 1 inch = 5,000 feet to 1 inch = 200 feet.

Paper sizes range from 10 inches by 10 inches to 38 inches by 38 inches.

See ASCS-441A (Price for Photographic Reproductions) for sizes and scales available.



Terraced farming



